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The transits of a few objects were observed with the six-inch, at the Vanderbilt University Observatory, as follows:

| DATE.          | e   | f                             | g                   |
|----------------|---|-------------------------------|---------------------|
| 1885. April 21 | h. m.<br>8 02.5<br><br>7 08.2<br><br>8 42.5 | h. m.<br>7 O5.5<br><br>7 54.5 | h. m. 6 55.7 7 46.5 |

Note (explanatory of the table of transits).—a is the small spot mentioned as having been seen 1880, July 24, and subsequently; b is a small black spot, the p. of two shown on the second linear belt north in the drawing of 1880, September 28, and subsequently; c is the second of these two black spots; d is the shading spoken of in connection with the Red Spot; e is a luminous spot, sometimes recorded as a notch in the north edge of the north equatorial band, probably not all the same object; f is a very small, intensely black spot on the south part of the equatorial belt—round, and like a satellite's shadow, but smaller; g is a luminous spot or notch in the north edge of north equatorial band.

## DRAWINGS OF *JUPITER* MADE WITH THE 26-INCH EQUATORIAL, AT WASHINGTON, DURING 1875.

## BY EDWARD S. HOLDEN.

During June and July, 1875, I made drawings of *Mars* and *Jupiter*, in colored crayons, for the purpose of comparing the tints on these two planets. The drawings were all made with the twenty-six-inch equatorial of the United States Naval Observatory, usually with a magnifying power of 400, and no pains were spared to make correct delineations, both as to forms and colors. From one cause and another, these drawings have not been published.

I beg to present a photograph of the sketches of *Jupiter* to the Society.

The original colored drawings [exhibited to the meeting] will be deposited in the library of the Lick Observatory, where they will always be available for comparison with more recent work. Below, I give the few notes which should accompany the drawings, which are reproduced in Plate V. It will be interesting to compare these

drawings with the admirable series by Mr. BARNARD, which are given in Plates I to IV.

There are three general remarks to be made on these drawings. In the first place, while the general features of the planet's surface have remained about the same from 1875 to 1889, there has been an entire change as to the form and disposition of the details. In the second place, the disposition of color on the surface of the planet has entirely changed, also. In 1889 there is very little of the red color to be seen, except in the great central belt, while in 1875 red belts were seen almost to the poles. Thirdly, the characteristic red color itself has changed in a surprising manner since 1875.

The color of the red markings in 1875 was most carefully matched in crayons, and I was finally satisfied with the tint of the drawings. In 1881 I found that the same crayons (pieces of which I had preserved) would no longer match the red belts. In 1889 the color of the red belts is entirely different from that previously drawn. All the observations were made with Clark objectives (of 26, 15½ and 36 inches aperture), which had their color-corrections very much alike. Unfortunately, it is not practicable to reproduce these colors in Plate V. The notes follow:

The top of the drawing is south; the right-hand side is east, or following.

1875. June 16, seeing not good; June 18, hazy; June 24, the columnar structure in the southernmost belt is somewhat too coarse; July 13, the position of the shadow of the satellite is for 8<sup>h</sup> 40<sup>m</sup>; July 16, planet unsteady.

## NOTICES FROM THE LICK OBSERVATORY.

PREPARED BY MEMBERS OF THE STAFF.

On the Determination of the Brightness of Stars by Means of Photography.

Dr. Charlier, assistant in the Observatory at Stockholm, has prepared a memoir \* on the use of photography in determinations of the brightness of stars, which has been published by the Astronom-

<sup>\*</sup> Ueber die Anwendung der Sternphotographie zu Helligkeitsmessungen der Sterne, von C. V. L. CHARLIBR. Publication der Astronomischen Gesellschaft, XIX. Leipzig 1889, 4to. (pp. viii, 31).